



# NATIONAL ASSOCIATION OF THE DEAF

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April 15, 2002

Federal Communications Commission  
Office of the Secretary  
Room TW-A325  
445 Twelfth Street SW  
Washington, DC 20554

**Re: CC Docket No. 02-33. Comments.**  
Appropriate Framework for Broadband Access  
to the Internet over Wireline Facilities

Dear Ms. Salas:

The National Association of the Deaf (NAD) appreciates this opportunity to submit comments on the Commission's Notice of Proposed Rulemaking (NPRM) on the legal and policy framework the Commission should adopt with respect to broadband services provided over wireline facilities.

Established in 1880, the NAD is the nation's oldest and largest consumer-based national advocacy organization safeguarding the civil and accessibility rights of deaf and hard of hearing individuals in the United States. The NAD is particularly interested in broadband.

Dockets 02-33, 95-20, and 98-10 address, respectively, the framework issue, universal service, and FCC jurisdiction over "enhanced services".

The NAD found this NRPM to be particularly intriguing. However, we limit our comments to a few items that are of special interest to deaf and hard of hearing Americans. First, we urge the FCC to re-consider its definition of "broadband" as comprising speeds, in one direction, of greater than 200 kilobits per second (kbps) (see footnote 2). We believe that the National Academy of Sciences panel, the Committee on Broadband Last Mile Technology, in its new report, Bringing Home the Bits, is correct in saying that 200 kbps is an artificially low threshold. The NAD's experience with video streaming, and that of groups with which the NAD works, notably providers of training in American Sign Language (ASL) in Maine, is that 2 megabits per second (Mbps) to 3 Mbps is required to ensure transmission of voice, video and data in a manner that benefits people who are deaf and hard of hearing. We agree with the International Telecommunications Union's definition of broadband as comprising 2 Mbps speed. The NAD also notes that for effective ASL communication to occur, sending *and* receiving speeds need to be at these levels. While this may not necessarily require truly symmetric architectures, it does require very high speeds in any direction.

Second, the NAD urges the FCC to recognize the implications of its tentative decision that broadband is a delivery mechanism. In Paragraph 7, the FCC suggests that it should adopt "a functional approach, focusing on the nature of the service provided to consumers...". The NAD agrees. By attending to the nature of broadband as experienced by consumers, the FCC will be able to appreciate the need for very high speed (see above). In addition, as a service, broadband transmits content. How do consumers experience that content? Critically: *Is the content that is created for and transmitted over broadband delivery mechanisms accessible to and usable by people with disabilities?* Equally important: *Are the end-user devices consumers use to create,*

*use, and transmit broadband content themselves accessible to and usable by people with disabilities?* A key to answering these questions is “protocol conversion” (see footnote 27). Broadband content, by its very nature, is digital. This means that it can be converted to formats needed and/or desired by end users. Digitized speech, for example, may be converted to text by speech-recognition systems. Such systems may be embedded in switching stations/central offices or may be installed by end users. See below on implications for systems and for end-user equipment.

The NAD believes that the FCC should explore its authority to insist that content and end-user devices be accessible to and usable by people with disabilities, or, failing that, be compatible with the adaptive devices used by individuals with disabilities to make their end-user equipment functional for them. The NAD strongly urges the Commission to invoke its authority under Title I of the Act to regulate enhanced services (see Computer II and Computer III decisions). There, the FCC determined that it could impose requirements on what then were called “enhanced services”. The 1996 Telecommunications Act essentially codified the FCC’s decisions, using the term “information services” in so doing. Although “information services” are defined in that Act in a way that is somewhat broader than “enhanced services,” the ability of the FCC to regulate remains. The NAD urges the FCC to invoke that authority. We also believe that the Commission’s general public-interest authority supports such steps.

Third, related to the above, in Paragraph 59, the FCC asks about possible application of section 255 of the Communications Act of 1934, as amended by the Telecommunications Act of 1996, to broadband. Thus, even were the FCC ultimately to rule that broadband services are information services, the NAD asks the Commission to protect the public interest by acting affirmatively to rule that services, content and end-user equipment must meet tests very much like those set by section 255: they should be accessible to and usable by people with disabilities, if readily achievable and, if such is not readily achievable, compatible with adaptive devices. In this connection, the NAD notes that such adaptive products may include speech recognition, speech synthesis, screen readers, and other technologies. A “255-like” rule would call upon wireline facilities owners to install hardware and software for these purposes in its facilities. Only where doing so is not feasible should providers be required, instead, only to make sure that the services, including content transmitted, are compatible with end-user-installed technologies (e.g., speech recognition hardware and software).

Fourth, the NAD notes that Paragraph 29 and associated footnote 67 discuss the ability of end users to create and not just to receive broadband. The NAD believes that this is of great import. Our members would benefit greatly by being able to create their own input, whether to the NAD or to government, in video streaming. They could sign their questions, for example. That would be of huge benefit to many deaf and hard of hearing Americans who are limited in reading and writing English. This returns us to the point we made earlier: to be truly useful, broadband needs to feature speeds of about 2 to 3 Mbps and to do so in more than one direction.

Finally, in paragraph 81, the Commission asks about universal service. The NAD believes that widespread deployment and wide affordability of broadband both necessitate that broadband be supported by universal service fees. It has been our experience that such fees are relatively modest on a per-subscriber basis. Broadband is so urgently important to America that it must be available to all of us.

Sincerely,

A handwritten signature in black ink, reading "Nancy J. Bloch". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Nancy J. Bloch  
Executive Director